

REMARKS

I. INTRODUCTION

Claim 10 has been canceled; claims 8, 11, and 16 have been amended; and claim 17 has been added hereby. Therefore, claims 8, 9 and 11-17 are pending in the present application. The amendments to claims 8 and 11, and the addition of claim 17, do not add new matter.

II. THE OBJECTION TO CLAIMS 8-15 SHOULD BE WITHDRAWN

Claims 8-15 have been objected-to on the grounds that, in claim 8, an "of" should be inserted between the terms "state" and "congestion." Since claim 8 has been amended in accordance with the Examiner's suggestion, it is submitted that the objection to claims 8-15 has been obviated.

III. THE REJECTION OF CLAIMS 8, 9, and 13-16 UNDER 35 U.S.C. § 102(b) SHOULD BE WITHDRAWN

Claims 8, 9, and 13-16 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,097,655 to Kammel (Kammel).

Independent claim 8 has been amended to incorporate the features of dependent claim 10, which, as the Office Action acknowledges, is not anticipated by Kammel. Therefore, the amendment renders claim 8, and its dependent claims 9 and 13-15, allowable over Kammel.

Independent claim 16 has been amended to incorporate features analogous to the features recited in claim 10. Therefore, claim 16 is also allowable over Kammel.

IV. THE REJECTION OF CLAIMS 10 and 11 UNDER 35 U.S.C. § 103(a) SHOULD BE WITHDRAWN

Claims 10 and 11 were rejected under 35 U.S.C. § 103(a) as unpatentable over Kammel in view of U.S. Patent No. 4,615,172 to Mayer (Mayer).

Claim 10 has been canceled, without prejudice, and its subject matter has been incorporated into amended claim 8. Claim 11 has been amended to depend from claim 8.

Claim 8, as amended, recites a method for controlling an internal combustion engine having an exhaust treatment system that includes a particle filter, the method including, *inter alia*, **simulating an initial quantity characterizing a state of congestion of the particle filter in accordance with at least one operating parameter of the internal combustion engine, the at least one operating parameter including an oxygen concentration in an exhaust gas.**

In the Office Action, it is asserted that Mayer teaches that "it is conventional in the art, to utilize the oxygen concentration to simulate a quantity characterizing a state of congestion of the particle filter." However, Applicants respectfully submit the Mayer does not teach this limitation because Mayer uses sensed parameters such as oxygen concentration as level triggers for performing various manipulations of a continuous regeneration process, but not to **simulate the state of congestion of the filter**. This is stated clearly in col. 3, lines 28-30 of Mayer: "The control unit 1 uses the input signals to make comparisons with the preset values and derives from them logical decisions which result in an instruction 19 to the actuator of the throttle flap 4."

Since Mayer refers to a continuous process of regeneration, it does not need to simulate or determine the state of congestion of the filter because it does not use a "full" state of the filter as a trigger to start a regeneration process. Instead, the regeneration occurs continuously, and the sensed parameters are used to regulate the temperature of the filter, rather than to determine the level of particulate matter the filter has absorbed.

The Examiner concedes that Kammel "fails to disclose the one operating parameter including the oxygen concentration in the exhaust gas." It is therefore submitted that the

combination of Kammel and Mayer does not render obvious amended claim 8 or its dependent claims 9, 11 and 13-15.

Independent claim 16, as amended, recites a unit configured to determine a quantity characterizing a state of congestion of the particle filter in accordance with at least one operating parameter of the internal combustion engine, the at least one operating parameter including an oxygen concentration in an exhaust gas. As discussed above with respect to claim 8, neither Kammel nor Mayer, individually or in combination, discloses or suggests determining a quantity characterizing a state of congestion of the particle filter in based on an oxygen concentration in the exhaust gas. Therefore claim 16, as amended, is also patentable over the applied references.

Withdrawal of the obviousness rejection based on Kammel and Mayer is therefore respectfully requested.

V. THE REJECTION OF CLAIM 12 UNDER 35 U.S.C. § 103(a) SHOULD BE WITHDRAWN

Claim 12 was rejected under 35 U.S.C. § 103(a) as unpatentable over Kammel in view of U.S. Patent No. 5,319,930 to Shinzawa (Shinzawa).

Claim 12 depends from amended claim 8, which recites simulating an initial quantity characterizing a state of congestion of the particle filter in accordance with at least one operating parameter of the internal combustion engine, the at least one operating parameter including an oxygen concentration in an exhaust gas.

It is submitted that Shinzawa does not cure the deficiency of Kammel as applied against parent claim 8, since Shinzawa also does not disclose simulating an initial quantity characterizing a state of congestion of the particle filter in accordance with at least one operating parameter including an oxygen concentration. In fact, Shinzawa does not mention or refer to using oxygen concentration to determine a congestion level of a filter.

For at least this reason, it is respectfully submitted that claim 12 is patentable over the combination of Kammel and Shinzawa, and that the obviousness rejection based on Kammel and Shinzawa should be withdrawn.

VI. NEW CLAIM

It is respectfully submitted that new claim 17 is patentable for at least the reason that none of the applied references disclose or suggest the features of determining an initial particle emission rate by mapping at least one operating parameter to a characteristic map, modifying the initial particle emission rate based on ambient conditions, and determining an adjusted particle emission rate by multiplying the modified particle emission by a factor having a value based on a temperature within the exhaust treatment system.

II. CONCLUSION

Applicants respectfully submit that the present invention is new, non-obvious, and useful. Reconsideration and allowance of pending claims 8, 9, and 11-17 are kindly requested.

Respectfully submitted,

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE CLAIMS:

Claims 8, 11 and 16 have been amended as follows:

8. (Amended) A method for controlling an internal combustion engine having an exhaust treatment system that includes a particle filter, comprising the step of:

simulating a quantity characterizing a state of congestion of the particle filter in accordance with at least one operating parameter of the internal combustion engine, the at least one operating parameter including an oxygen concentration in an exhaust gas.

11. (Amended) The method according to claim [10] 8, further comprising the step of determining the oxygen concentration in the exhaust gas in accordance with operating parameters.

16. (Amended) A device for controlling an internal combustion engine having an exhaust treatment system including a particle filter, comprising:

a unit configured to determine a quantity characterizing a state of congestion of the particle filter in accordance with at least one operating parameter of the internal combustion engine, the at least one operating parameter including an oxygen concentration in an exhaust gas.